

O. H. M. S.

W. J. Gerald
Deputy Minister.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 128

COMMON SALT

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OTTAWA, October 25, 1906.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—In accordance with your authorisation of August 14 last, a collection of table and dairy salt samples was made in August and September last, the number and the localities where collected being as follows:—

Inspection Districts.	No. of Samples.
Nova Scotia	5
Prince Edward Island	2
New Brunswick	5
Quebec	8
St. Hyacinthe	8
Montreal	10
Ottawa	8
Kingston	8
Toronto	10
London	8
Manitoba	6
Calgary	4
British Columbia	5
Total	87

The origin of these samples and the results they yielded on analysis to Mr. J. G. A. Valin, Assistant Analyst, are given in the table appended to this report. The percentage of chloride of sodium contained in them varies from 93 to 98, with corresponding differences as regards the quantities of moisture and impurities present. It is probably inadmissible to call the latter adulterations, the limits of variability for salt not having been yet established in Canada. In the United States a standard was

adopted on June 26, 1906, by circular No. 19 from the office of the Secretary of Agriculture, which reads as follows:—

'Table salt, dairy salt, is fine grained crystalline salt, containing, on a water free basis, not more than one and four tenths (1.4) per cent of calcium sulphate (CaSO_4), nor more than five tenths (0.5) per cent of calcium and magnesium chlorides (CaCl_2 and MgCl_2) nor more than one tenth (0.1) per cent of matters insoluble in water.'

It is not necessary to recalculate the results given in the table and state them on a dry basis in order to see that a very large proportion of the sample described would not come up to the United States standard. Taking the figures as they stand in the table there are at least one-half of the samples which would not do so. It is enough for the present to call attention to this fact in order that manufacturers or furnishers may aim at supplying an article of a higher degree of purity. On the other hand it is satisfactory to note that many of the samples of Canadian origin fulfil the requirements of the United States Department of Agriculture.

Among the samples examined there are six which contain foreign substances insoluble in water, and which have apparently been added to prevent the particles of salt from caking together. It does not appear that this constitutes adulteration, for the Act provides that the usual definitions shall not apply, 'if any matter or ingredient not injurious to health has been added to the food or drug because the same is required for the production or preparation thereof as an article of commerce in a fit state for carriage or consumption, and not fraudulently to increase the bulk weight or measure of the food or drug, or to conceal the inferior quality thereof.' Nevertheless it would seem to be necessary that these brands should each, on selling, be labelled as a mixture.

I have the honour to be, sir,
Your obedient servant,

THOMAS MACFARLANE,
Chief Analyst.

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RESULTS of Examining 87 Samples

Date of Collection.	Nature of Sample.	Number of Sample	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.
				Quantity.	Price.	
1906.			<i>District of Nova Scotia— R. J. Waugh, Inspector.</i>		Cts.	
Aug. 28	Table Salt	27476	Jos. Scott, Halifax, N.S.	1 bag	10	Snow Flake Salt Co., New York.
" 28	"	27477	H. Wentzell & Co., Halifax, N.S.	1 "	5	Canadian Salt Co., Windsor, Ont.
" 31	"	27486	Wm. Law & Co., Yarmouth, N.S.	1 "	5	" " "
" 31	"	27487	Cain Bros., Yarmouth, N.S.	1 "	10	" " "
" 29	"	27481	J. J. Skerry, Halifax, N.S.	1 "	5	Grant Oxley, Halifax
			<i>District of P. E. Island— T. Moore, Inspector.</i>			
Aug. 23	Table Salt	28324	R. F. Maddigan, Charlottetown.	3 tins	30	Dearborn & Co., St. John, N.B.
" 23	"	28325	John McKenna, Charlottetown.	3 bags	15	Thomson Bros., St. Clair, Michigan, U.S.
			<i>District of New Brunswick— J. C. Ferguson, Inspector.</i>			
Aug. 24	Table Salt	24273	Two Barkers, Ltd., 100 Princess St., St. John, N.B.	1 bag	12	Canadian Salt Co., Ltd., Windsor, Ont.
" 24	"	24274	W. A. Simonds, 89 Union St., St. John, N.B.	3 pkgs	30	Diamond Crystal Salt Co., St. Clair, Michigan, U.S.
" 24	Salt, English Dairy	24275	P. Nase & Son, Cor. Main and Bridge Sts., St. John, N.B.	1 box	20	Gaudy & Hallison, Packers and Furnishers, St. John, N.B.
" 24	Dairy Salt	24276	D. J. Purdy, 325 Main St., north end, St. John, N.B.	3 pts.	5	Imported from Liverpool, England.
" 24	Table Salt	24277	Charles F. Francis & Co., 141 Charlotte St., St. John, N.B.	3 pkgs	30	Heckers, Boston, Mass., U.S.A.
			<i>District of Quebec— C. E. Roy, Inspector.</i>			
Aug. 29	Table Salt, Windsor	714	J. E. Potvin, Roberval, Que.	1 bag	5	Côte et Boivin et Cie., Roberval, Que.
" 29	"	715	Jos. Brassard, Roberval, Que.	1 "	5	N. Rioux et Cie., Quebec
" 30	"	717	Ant. Amante, Chicoutimi, Que.	1 "	5	Côte, Boivin, et Cie., Chicoutimi, Que.
" 30	Dairy Salt	719	J. A. Pelletier, Chicoutimi, Que.	1 "	5	N. Rioux et Cie., Quebec
" 31	Brussels Salt	721	Nereo Simard, Bagotville, Que.	1 "	5	A. Joseph & Sons, Quebec
Sept. 10	Dairy Salt	724	J. F. Saindon, Rivière du Loup, Fraserville, Que.	1 "	Not known	
" 11	Table Salt	727	Abraham Caron, Rimouski, Que.	1 "	5	N. Turcotte et Cie., Quebec
" 14	Dairy Salt	733	M. Thibaudeau, Quebec	1 "	5	D. Rattray & Son, Quebec

of Common Salt.

Inspector's Report.	RESULTS OF ANALYSIS.							Number of Sample.	Remarks by the Analyst.
	Moisture. p. c.	Residue In soluble in Water. p. c.	Calcium Sulphate. p. c.	Calcium Chloride. p. c.	Magnesium Chloride. p. c.	Sodium Chloride ; by difference. p. c.			
The vendor is a wholesale dealer	0.40	0.00	0.72	0.65	0.07	98.16	27476		
" " "	0.37	0.00	1.36	0.88	0.29	97.19	27477		
" " "	0.53	0.00	0.91	0.24	0.00	98.30	27486		
Labelled Windsor fine table salt	0.36	0.00	1.15	0.53	0.00	97.96	27487		
Labelled peerless crystal salt for family and dairy use.	0.10	0.00	0.91	0.46	0.16	98.37	27481		
National table salt does not cake ; for the best and strongest dairy salt ask for Dearborn's premium dairy salt. Crown table and dairy salt	0.90	3.66	1.56	0.71	0.00	93.17	28324	The insoluble residue is starch.	
	0.24	1.46	1.05	0.73	0.00	96.52	28325		
Labelled Windsor table salt ; purest and best.	0.58	0.00	1.42	0.27	0.00	97.73	24273		
Labelled scientifically made. Manufactured by Diamond Crystal Salt Co., St. Clair, Mich. ; prepared shaker salt for the table ; always dry.	0.24	1.33	0.54	0.75	0.00	97.14	24274		
Labelled English dairy salt	0.35	0.00	1.57	0.18	0.00	97.90	24275		
In bulk ; Liverpool fine salt ; table or dairy use.	0.43	0.00	1.77	0.30	0.00	97.50	24276		
Labelled Heckers' opal table salt ; in moisture proof paraffine bag, especially for ships and seaside use.	0.48	0.68	1.63	0.16	0.47	96.58	24277		
	0.24	0.00	0.64	0.59	0.53	98.00	714		
	0.48	0.28	1.70	0.30	0.49	96.75	715		
	0.20	0.00	1.02	0.24	0.00	98.54	717		
	0.32	0.00	1.84	1.00	0.00	96.84	719		
	0.44	0.00	1.46	0.32	0.00	97.78	721		
	0.32	0.00	1.66	0.71	0.17	97.14	724		
	0.32	0.00	1.26	0.48	0.24	97.70	727		
	0.30	0.00	1.84	0.76	0.17	96.93	733		

RESULTS of Examining 87 Samples

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.
				Quantity.	Value.	
1906.			<i>District of St. Hyacinthe— J. C. Boudeau, Inspector.</i>		Cts.	
Aug.	20 Table Salt	468	Paul Landry, Sorel, Que.	1 bag.	5	The Canadian Salt Co., Windsor, Ont.
"	21 Dairy Salt	469	F. O. Lamarche, Berthier-ville, Que.	1 1/2 lb.		The Dominion Salt Agency, London, Ont.
"	21 Table Salt	470	Dile, A. Racette, L'Epin-panie, Que.	1 bag.	5	The Canadian Salt Co., Windsor, Ont.
"	21 Table Salt, 'Franklin'	471	C. Barette, Joliette, Que.	2 lbs.		Veret, Stewart & Co., Montreal.
"	21 Dairy Salt	472	L. A. Chartier, Joliette, Que.	2 lbs.		The Canadian Salt Co., Windsor, Ont.
"	22 Table Salt, 'Snow Flake.'	473	Bureau et Cie., Shawinigan Falls, Que.	1 box.	20	The Snow Flake Salt Co., New York.
"	24 Dairy Salt	474	W. Martel et Cie., Three Rivers, Que.	1 bag.	20	The Canadian Salt Co., Windsor, Ont.
"	25 Table Salt	475	J. B. St. Pierre, St. Hyacinthe, Que.	1 "	5	E. Benoit, St. Hyacinthe.
			<i>District of Montreal— J. J. Costigan, Inspector.</i>			
Aug.	28 Table Salt	31516	H. F. Barre, 4818 St. Catherine, Maisonneuve, Que.	3 bags	15	Canadian Salt Co., Windsor, Ont.
"	28 Dairy Salt	31517	Joseph Dubois, 554 Notre Dame, Maisonneuve, Que.	3 lbs.	5	Hudson et Orsali, Montreal.
"	31 Salt	31518	Henry Russell, 2663 St. Catherine, Montreal.	2 lbs.	4	Hudson, Hebert et Cie., Montreal.
"	31	31519	English Provision Co., 681 St. Catherine, Montreal.	2 lbs.	2	Not known.
"	31	31520	Antoine St. Denis, St. Anne de Bellevue, Que.	1 bag.	5	Canadian Salt Co., Windsor, Ont.
Sept.	6 Dairy Salt	31521	W. P. Brennan, St. Therese de Blainville, Que.	3 lbs.	3	Veret, Stewart & Co., Montreal.
"	6	31522	H. J. Giles & Bro., Lachute, Que.	3 "	15	Canadian Salt Co., Windsor, Ont.
"	11	31523	McRae Bros., Richmond, Que.	3 "	15	" "
"	11 Coarse Salt	31524	J. Brown, Huntingdon, Que.	3 "	5	Not known.
"	11 Dairy Salt	31525	E. C. McCoy, Huntingdon, Que.	3 "	5	"
			<i>District of Ottawa—A. E. Sanderson, Inspector.</i>			
Sept.	10 Table Salt	29364	Alex. Larose, 128 Queen St., west, Ottawa.	1 bag.	10	Canadian Salt Co., Ltd., Windsor, Ont.
"	11	29374	F. & J. Castle, wholesale, Queen St., Ottawa.	1 "	10	" " "
"	11	29375	S. Daniels, O'Connor St., Ottawa.	1 "	10	" " "
"	11 Dairy Salt	29376	" " 1 gall.	10	Bate & Sons, Ottawa	
"	11 Table Salt	29377	C. B. McLean, Bank St., Ottawa.	1 bag.	10	Canadian Salt Co., Ltd., Windsor, Ont.
"	11	29378	Geo. H. Hopper, Bank St., Ottawa.	1 "	10	" " "

of Common Salt—Continued.

Inspector's Report.	RESULTS OF ANALYSIS.							Number of Sample.	Remarks by the Analyst.
	Moisture. p. c.	Residue In- soluble in Water. p. c.	Calcium Sulphate. p. c.	Calcium Chloride. p. c.	Magnesium Chloride. p. c.	Sodium Chlor- ide; by dif- ference. p. c.			
Included in the Department sample...	0.32	0.00	0.78	0.63	0.00	98.27	468		
Taken out of a 200-lb. bag	0.22	0.00	0.81	0.81	0.00	98.16	469		
Same as No. 468	0.17	0.00	0.81	0.39	0.17	98.46	470		
	0.54	0.00	0.40	0.42	0.00	98.64	471		
Out of a 300-lb. barrel; factory filled	0.30	0.00	0.95	0.94	0.00	97.81	472		
	0.48	0.00	0.36	0.95	0.70	96.91	473		
	0.20	0.00	1.20	0.46	0.00	98.05	474		
	0.24	0.00	1.22	0.78	0.02	97.64	475		
Windsor table salt	0.78	0.00	1.19	0.78	0.00	97.25	31516		
	0.64	0.68	1.15	0.85	0.00	96.68	31517		
Dairy salt	4.10	0.15	1.53	0.26	0.71	93.25	31518		
	4.95	0.00	1.53	0.94	0.00	92.58	31519		
Table salt	0.25	0.00	1.36	0.60	0.00	97.75	31520		
Put up in 50-lb. sacks. Stamped fac- tory filled; Franklin, Liverpool.	0.40	1.15	1.63	0.48	0.00	97.35	31521		
Put up in 50-lb. sacks	0.18	0.00	1.14	0.36	0.40	98.2	31522		
From 20-lb. bag	0.20	0.00	1.02	0.41	0.11	98.29	31523		
	1.20	0.38	1.14	0.10	0.02	97.16	31524		
Factory filled; Liverpool	0.30	0.00	1.73	0.69	0.00	97.28	31525		
Labelled purest and best Windsor table salt	0.16	0.00	1.22	0.91	0.18	97.53	29364		
" "	0.32	0.00	1.16	0.32	0.23	97.97	29374		
" "	0.32	0.00	1.02	0.34	0.14	98.18	29375		
	0.31	0.30	1.68	0.50	0.00	97.21	29376		
Labelled purest and best Windsor table salt	0.22	0.00	1.19	0.82	0.20	97.57	29377		
" "	0.20	0.00	1.43	0.18	0.00	98.19	29378		

RESULTS of Examining 87 Samples

of Common Salt—*Continued.*

Inspector's Report.	RESULTS OF ANALYSIS.							Remarks by the Analyst.
	Moisture, p. c.	Residue In- soluble in Water.	Calcium Sulphate.	Calcium Chloride.	Magnesium Chloride.	Sodium Chlor- ide; by dif- ference.	Number of Sample.	
Labelled purest and best Windsor table salt.	0.40 0.48	0.00 0.34	1.16 1.53	0.00 0.10	0.36 0.07	98.08 97.48	29379 29380	
	0.20 0.22 0.19 0.36 0.24 0.26 0.14 0.10	0.00 0.81 0.00 0.61 0.00 1.46 0.68 0.61	0.85 0.81 1.08 0.61 0.91 0.44 0.32 0.54	0.10 0.39 0.51 0.10 0.45 0.44 0.32 0.54	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	98.85 98.58 98.22 98.93 98.40 97.84 98.86 98.75	29484 29487 29492 29496 29497 29498 29499 29500	
	0.16 0.24 1.36 0.60 0.22 0.06 0.44 0.18 0.50 0.50	0.00 0.00 0.00 1.26 0.61 1.70 1.52 1.52 1.40 1.50	0.88 1.22 0.61 0.76 1.56 0.80 1.08 0.85 1.40 1.50	0.71 0.51 0.50 0.08 0.16 0.21 0.75 0.74 0.10 0.40	0.54 0.37 0.00 0.28 0.08 0.00 0.18 0.16 0.07 0.00	97.71 97.66 97.53 97.78 96.47 97.23 96.03 96.55 96.88 96.46	30174 30176 30178 30184 30186 30188 30189 30192 30193 30194	
								Insoluble residue starch.
								Starch in insoluble residue.
								Insoluble residue is starch.
	2.20 0.40 0.78	0.00 0.00 0.00	1.36 0.54 1.25	0.88 0.59 0.65	0.00 0.00 0.00	95.56 98.47 97.32	30153 30154 30155	

RESULTS of Examining 87 Samples

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	COST.		Name and Address of Manufacturer or Furnisher.
				Quantity.	Value.	
1906.			<i>District of London—Con.</i>			
" 25	Dairy Salt	30162	George A. Young, Chat-1 jar. ham, Ont.	12	Western Salt Co., Moore-town, Ont.	
" 25	"	30163	Edward O'Flaherty, Stratford, Ont.	5	Dominion Salt Co., London, Ont.	
" 27	Coarse Salt.....	30165	Western Canada Flour 2 " Mills Co., Goderich, Ont.	5	Vendors	
" 27	Common Salt.....	30166	J. W. Irwin, Clinton, 2 " Ont.	5	Richard Ransford, Clinton, Ont.	
" 28	Medium Fine Salt..	30169	W. E. Kerslake, flour and 2 " feed merchant, Seaford, Ont.	5	Dominion Salt Co. Agency, London, Ont.	
<i>District of Manitoba—W. M. Conklin, Inspector.</i>						
Oct. 17	Salt, Cerebos.....	25799	K. McKenzie & Co., Win-1 lb. nipeg.	10	Cerebos, Ltd., London, Eng.	
<i>District of Calgary—W. Fletcher Inspector.</i>						
" 17	Salt.....	25800	Campbell Bros. & Wilson, 3 " Winnipeg.	"	The Canadian Salt Co., Windsor, Ont.	
" 17	Dairy Salt.....	25902	J. R. Cole, St. Boniface. 2 $\frac{1}{2}$ "	"	" "	
" 17	Salt.....	25901	Hicks Bros., Winnipeg..... 3 "	"	Port Huron Salt Co., Port Huron, Mich.	
" 17	Dairy Salt.....	27903	T. Pelletier, St. Boniface. 2 $\frac{1}{2}$ "	"	The Canadian Salt Co., Windsor, Ont.	
" 17	"	25904	J. L. Collin, St. Boniface. 2 $\frac{1}{2}$ "	"		
<i>District of British Columbia—E. B. Parkinson, Inspector.</i>						
Sept. 12	Table Salt.....	28688	G. F. & J. Galt, wholesale, 3 sacks Calgary.	15	Canadian Salt Co., Windsor, Ont.	
" 12	"	28689	Codville, Smith Co., 3 " wholesale, Calgary.	15	Western Salt Co., Moore-town, Ont.	
" 12	"	28690	Campbell, Wilson & Horne, 3 " wholesale, Calgary.	15	Canadian Salt Co., Windsor, Ont.	
" 12	"	28691	A. Newham, retail, Cal. 3 " gary.	30	" "	
Aug. 29	Table Salt.....	28175	Kelly, Douglas & Co., Ltd., 3 sacks wholesale, Vancouver, B.C.	5	Worcester Salt Co., New York, U.S.	

of Common Salt.—*Continued.*

RESULTS of Examining 87 Samples

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	COST.		
				Quantity.	Value.	Name and Address of Manufacturer or Furnisher.
<i>District of British Columbia —Con.</i>						
1906.						Cts.
Aug. 29	Dairy Salt	28178	The Hudson Bay Co., 3 lbs. whole sale merchants, Vancouver, B.C.	3 lbs.	5	W. A. Anderson, agent Vancouver, B.C.
" 29	"	28179	E. W. Leeson Co., whole- sale grocers, Vancouver, B.C.	2 "	10	Union Pacific Salt Co., San Francisco, Cal.
" 30	Table Salt	28182	The London Grocery, re- tail, Granville St., Vancouver, B.C.	3 "	10	The Canadian Salt Co., Windsor, Ont.
" 30	"	28184	J. F. May, retail, Pender St., Vancouver, B.C.	1 tin.	20	Cerebos, Ltd., Newcastle- on-Tyne and London.

of Common Salt—*Concluded.*

Inspector's Report.	RESULTS OF ANALYSIS.							Remarks by the Analyst.
	Moisture.	Residue Insoluble in Water.	Calcium Sulphate.	Calcium Chloride.	Magnesium Chloride.	Sodium Chloride; by difference.	Number of Sample.	
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.		
Australian dairy salt; did not know manufacturer. No brand or mark on sacks.	0.28	0.38	1.03	0.39	0.02	97.90	28178	
Union Pacific Salt Co., 'Eagle Brand.' Guaranteed dairy salt.	0.14	0.00	0.47	0.41	0.00	98.98	28179	
'Windsor Brand.' This salt consists of purely sifted natural crystals, and is infinitely superior to the ground salt heretofore sold. It is absolutely pure and will not cake like other salt in damp weather.	0.32	0.00	1.63	0.02	0.00	98.03	28182	
'Cerebos salt' brand contains among other ingredients, mixed phosphates, constituting the food strength of bran (usually thrown away), forming the substance of bone, brain and nerve.	0.80	5.82	0.96	0.00	0.00	92.20	28184	Total 99.78. This residue contains phosphate and 5.8% alumina, Na Cl. was determined directly in this sample.